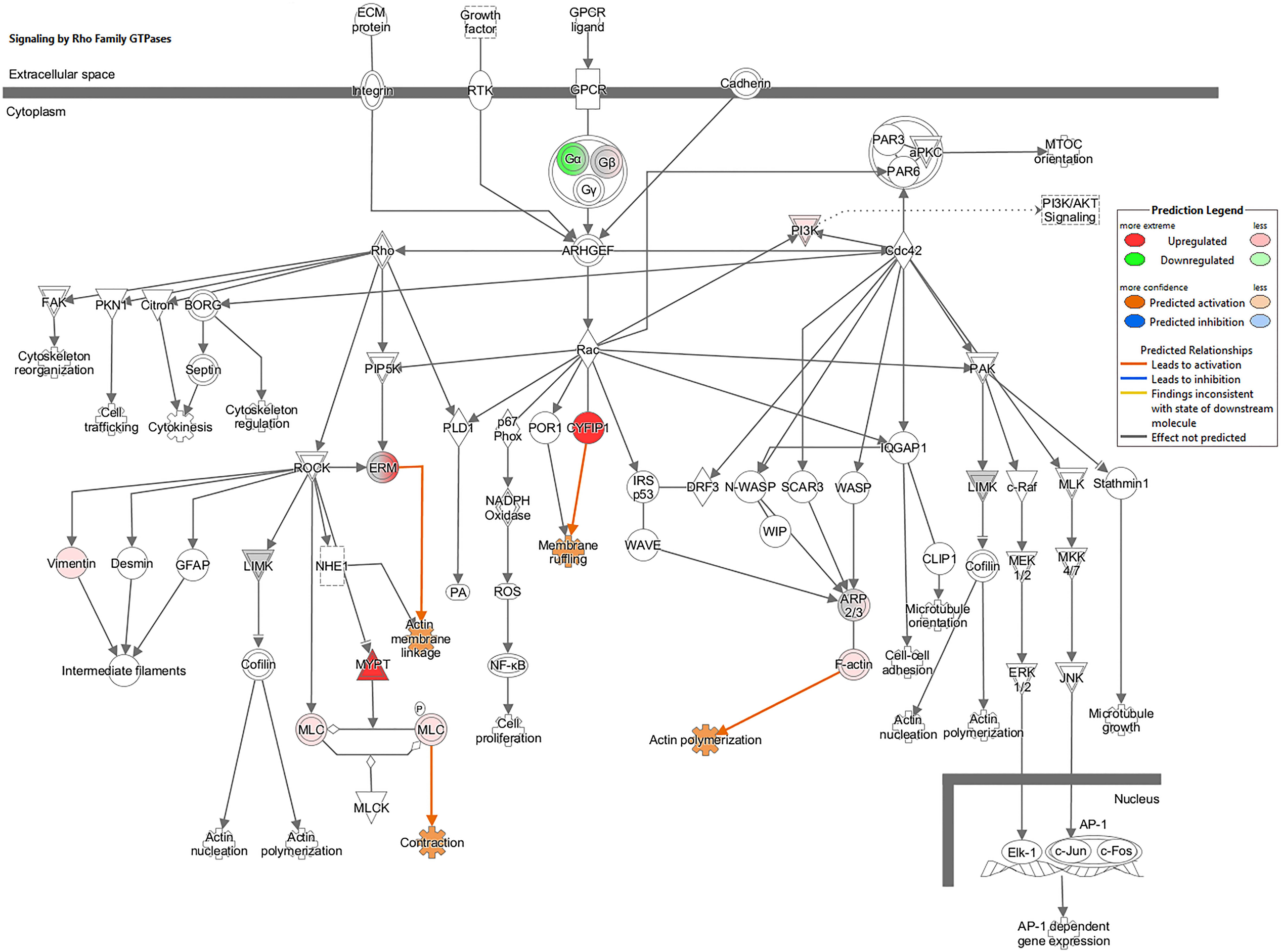
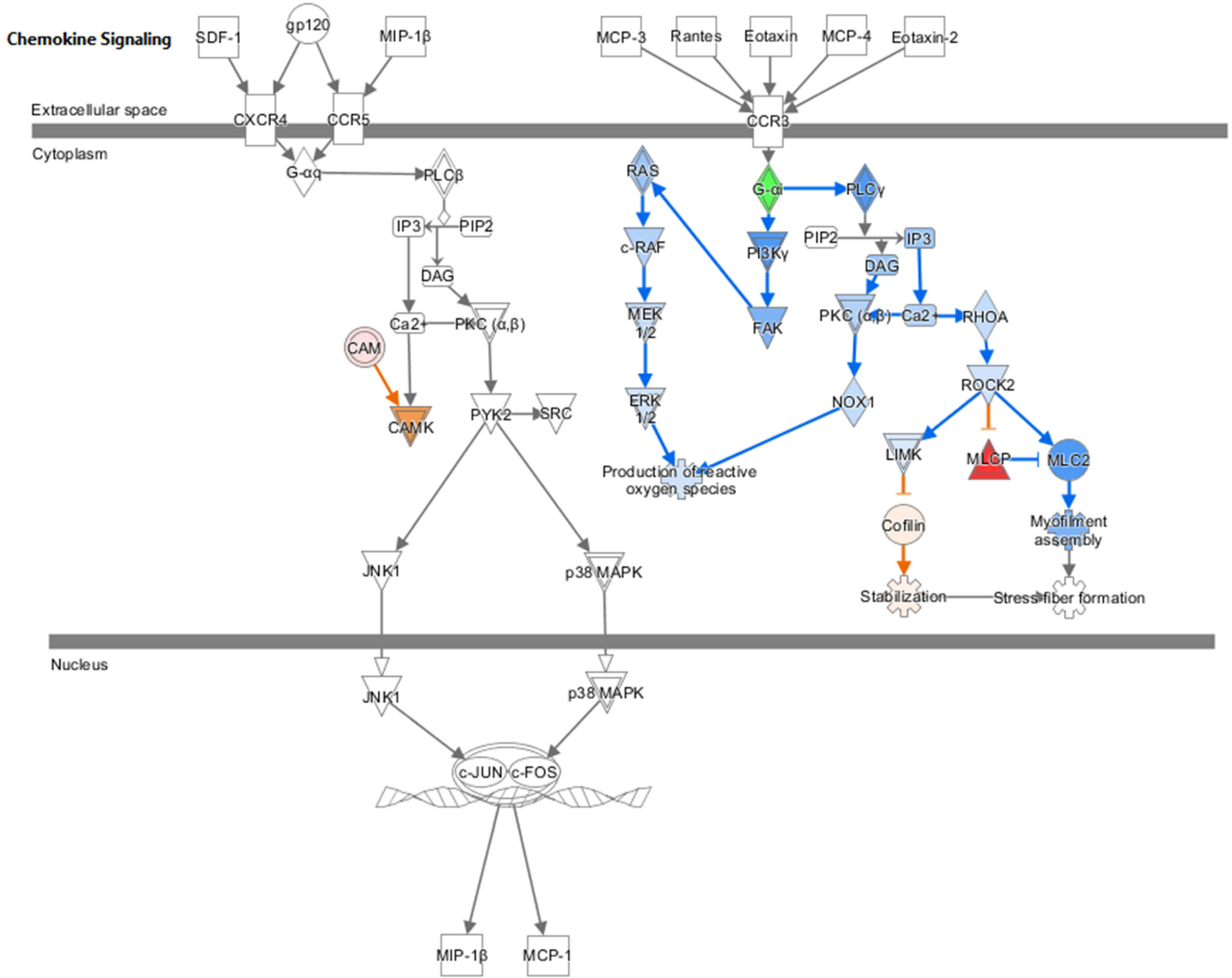
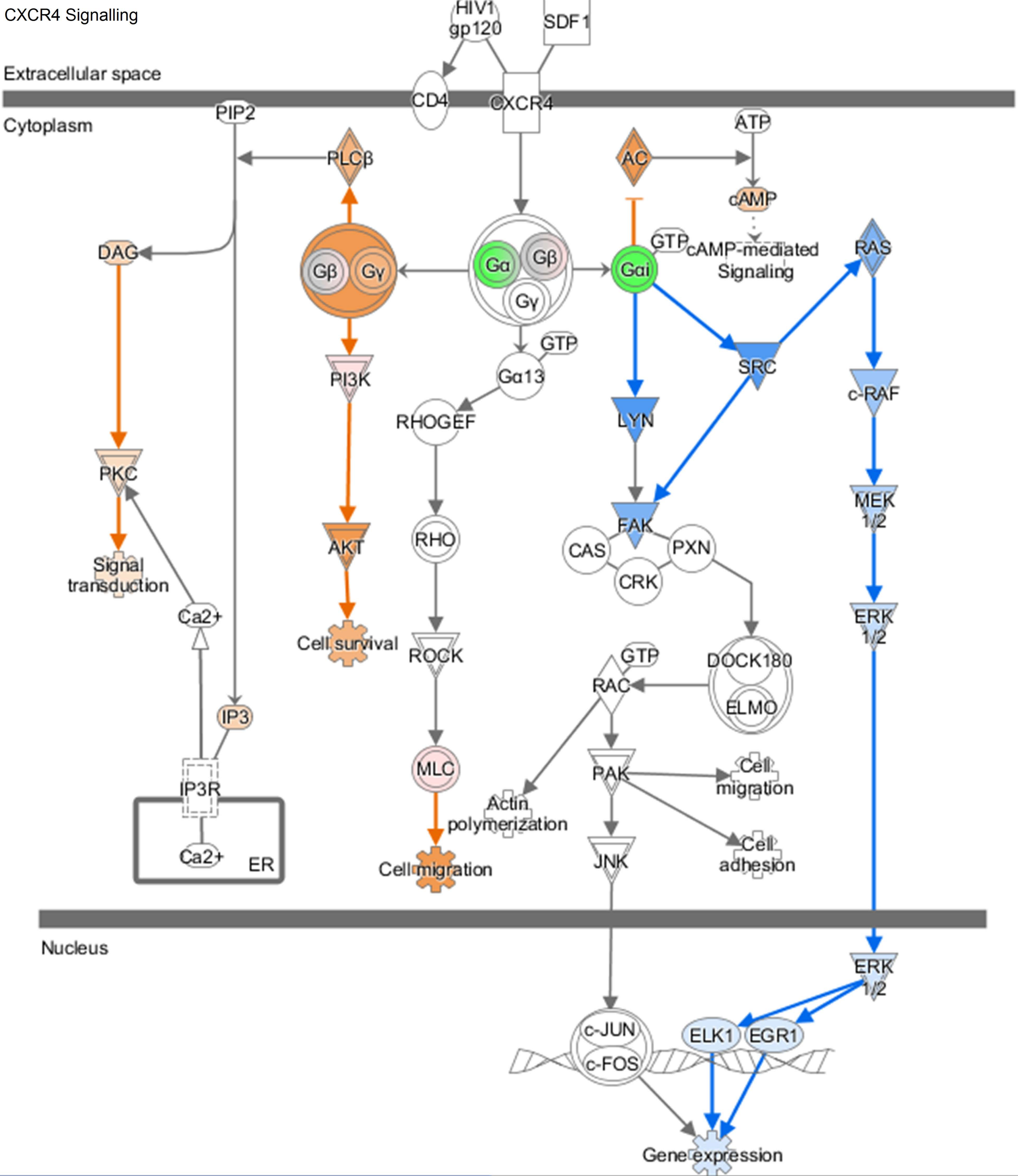
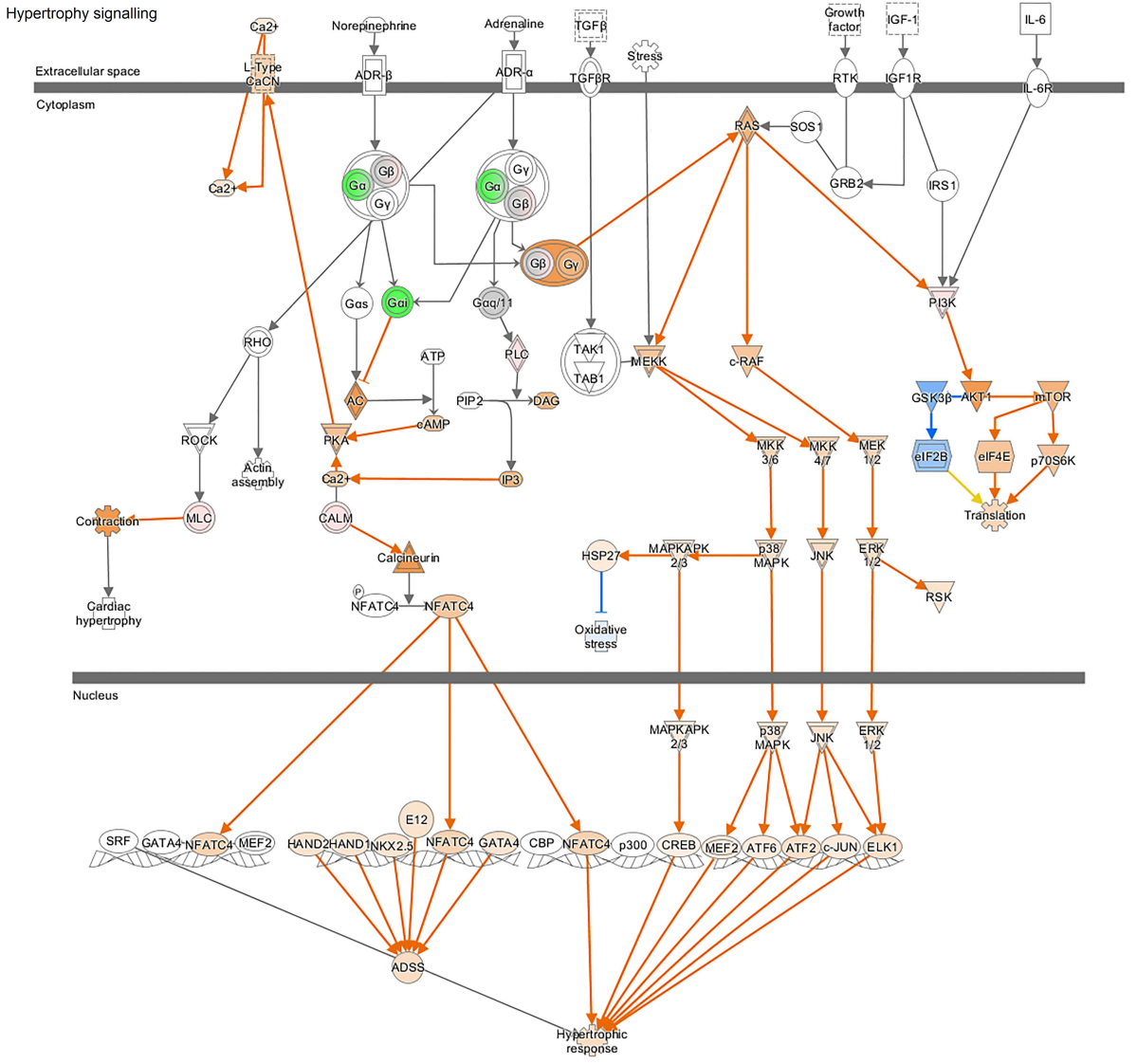
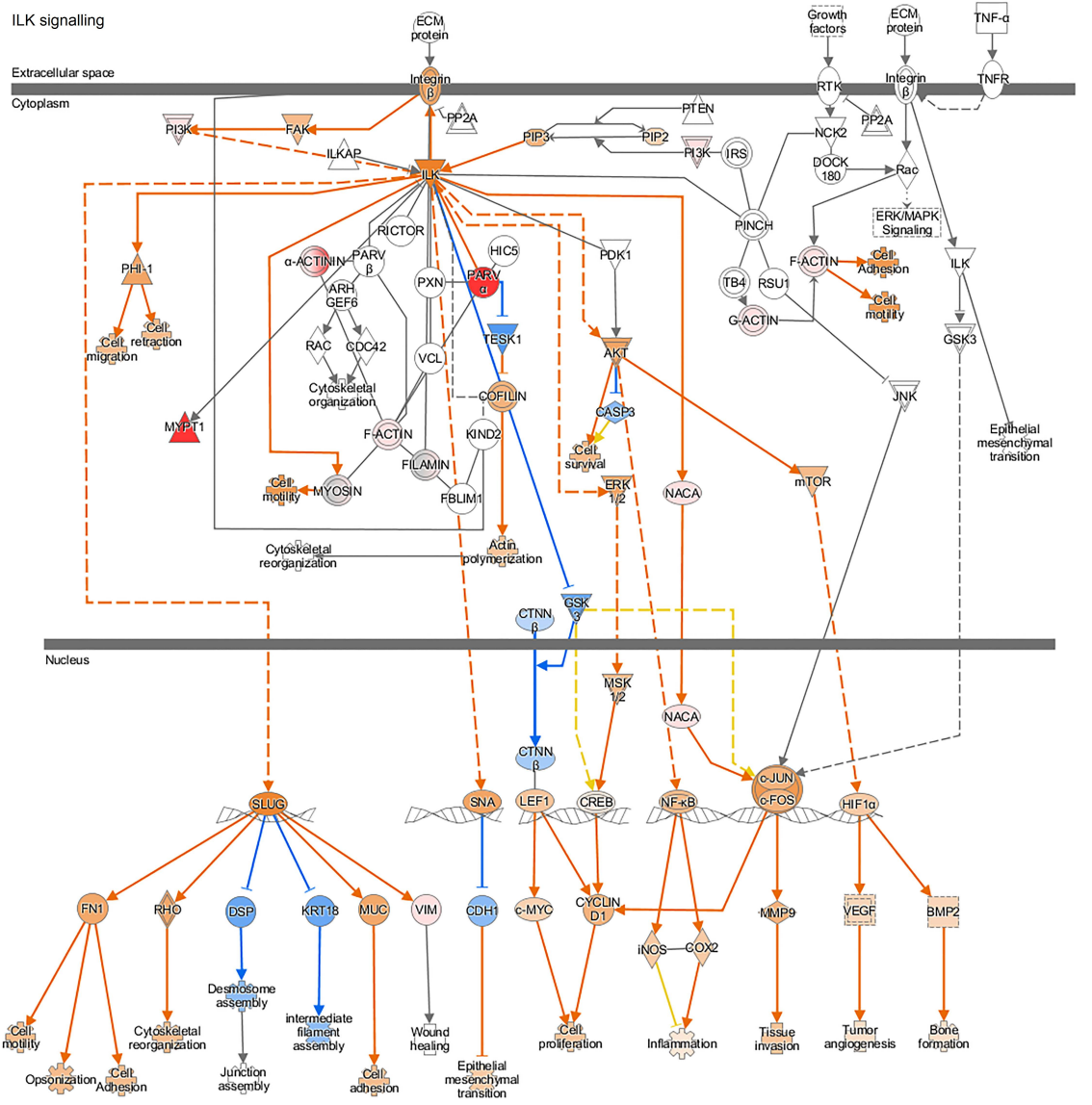
Other significantly modulated pathways predicted from caerin 1.9-treated TC-1 cell proteome

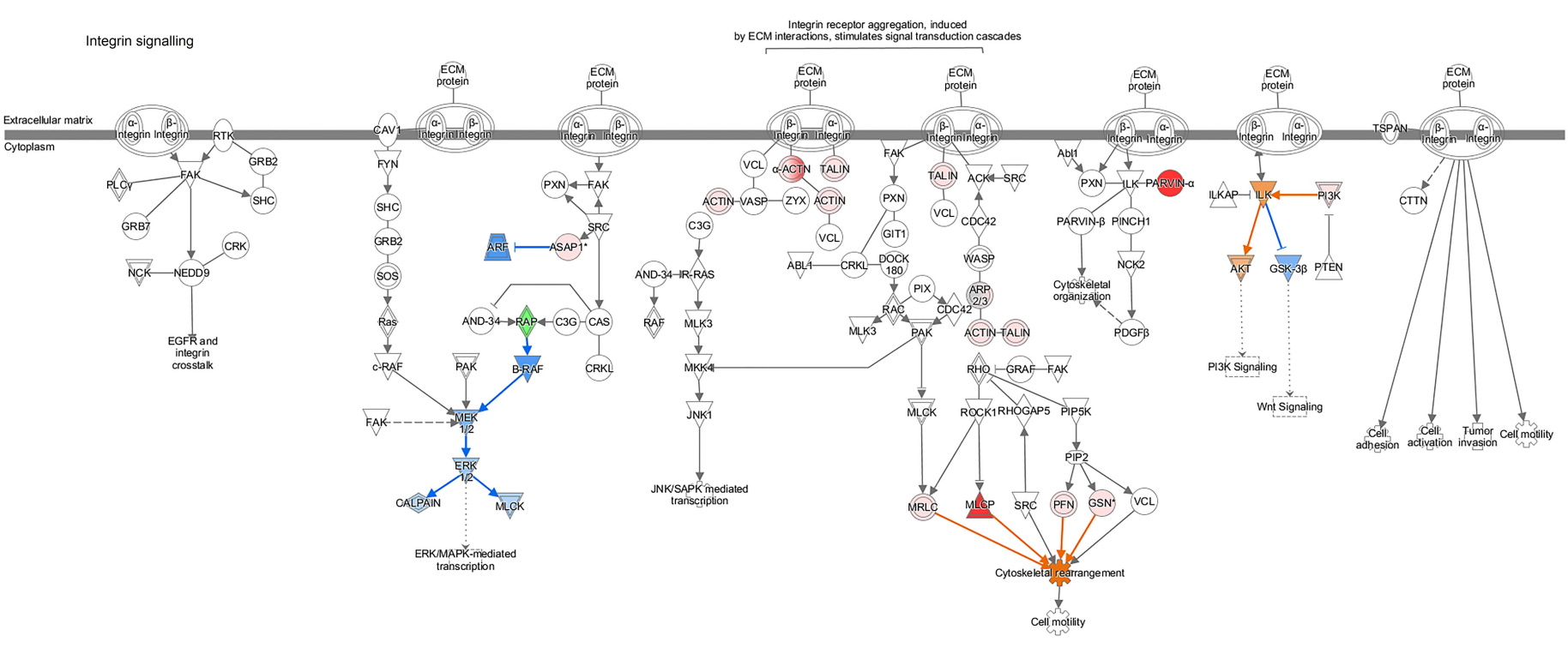



Chemokine Signaling
SDF-1
gp120
MIP-1β
MCP-3
Rantes
Eotaxin
MCP-4
Eotaxin-2
Extracellular space
CXCR4
CCR5
CCR3
Cytoplasm
G-αq
PLCβ
IP3
PIP2
DAG
Ca2+
PKC (α,β)
CAM
CAMK
PYK2
SRC
JNK1
p38 MAPK
RAS
c-RAF
MEK 1/2
ERK 1/2
G-αi
PI3Kγ
FAK
PLCγ
PIP2
IP3
DAG
PKC (α,β)
Ca2+
RHOA
ROCK2
NOX1
Production of reactive oxygen species
LIMK
MLCP
MLC2
Cofilin
Myofilment assembly
Stabilization
Stress fiber formation
Nucleus
JNK1
p38 MAPK
c-JUN
c-FOS
MIP-1β
MCP-1

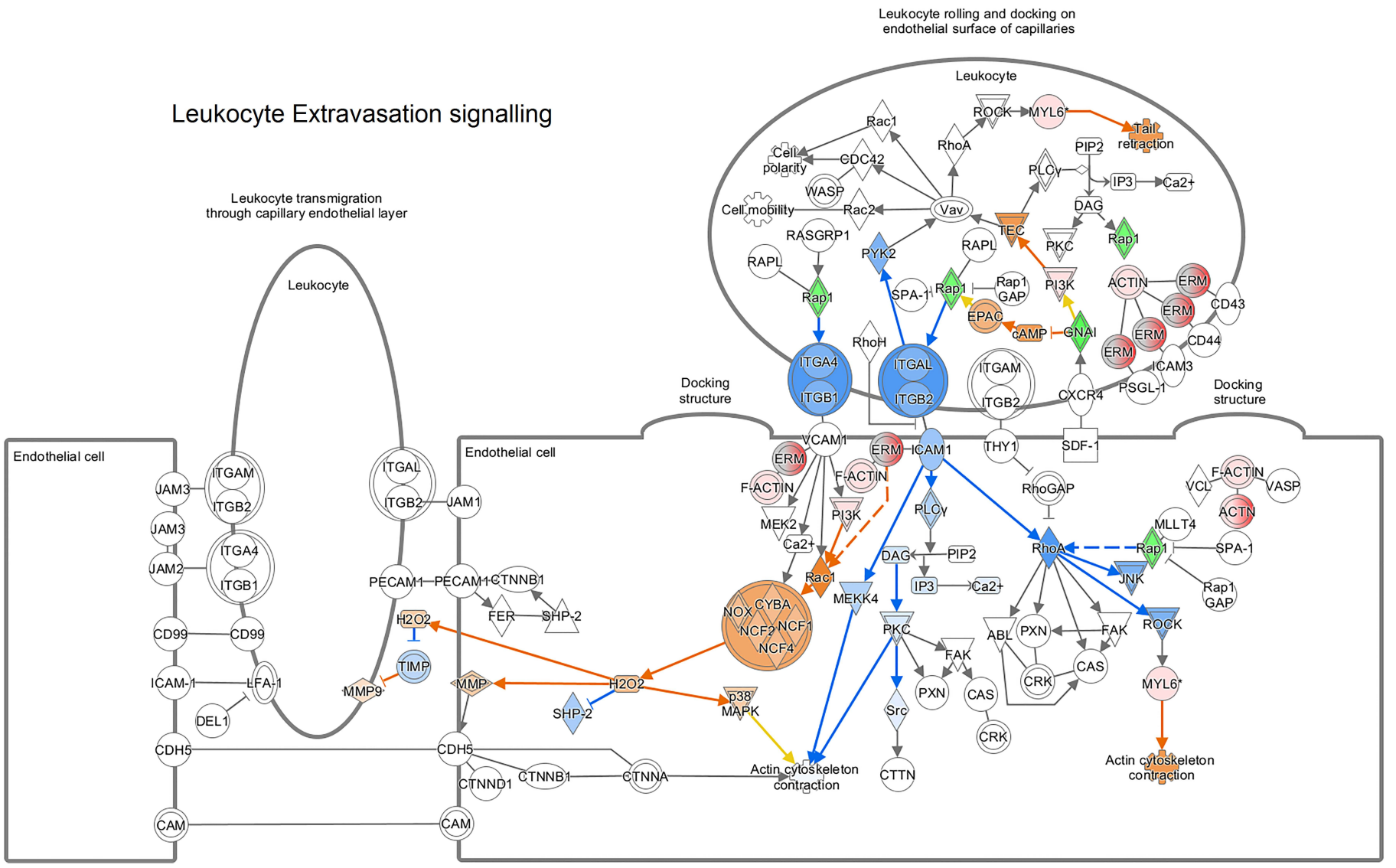

CXCR4 Signalling
HIV1 gp120
SDF1
Extracellular space
CD4
CXCR4
Cytoplasm
PIP2
PLCβ
AC
ATP
cAMP
DAG
Gβ
Gγ
Gα
Gβ
Gγ
Gαi
GTP
cAMP-mediated Signaling
RAS
PI3K
GTP
Gα13
SRC
c-RAF
RHOGEF
LYN
PKC
MEK 1/2
FAK
AKT
RHO
CAS
PXN
CRK
Signal transduction
Ca2+
ERK 1/2
Cell survival
ROCK
GTP
DOCK180
RAC
ELMO
IP3
MLC
PAK
Cell migration
IP3R
Actin polymerization
Ca2+
ER
Cell migration
JNK
Cell adhesion
Nucleus
ERK 1/2
c-JUN
c-FOS
ELK1
EGR1
Gene expression

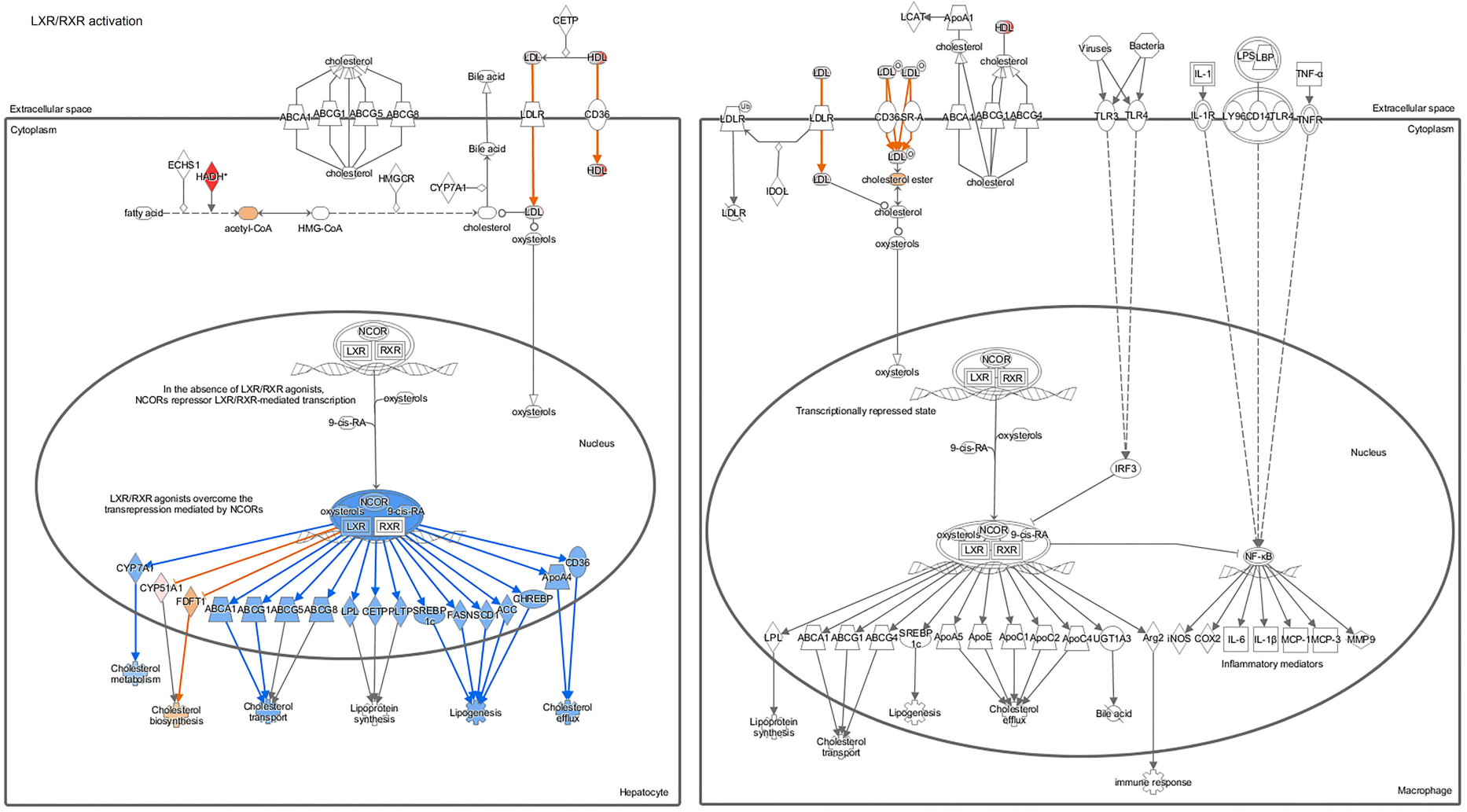

Hypertrophy signalling
Extracellular space
Cytoplasm
Nucleus
Ca2+
L-Type CaCN
Norepinephrine
ADR-β
Adrenaline
ADR-α
TGFβ
TGFβR
Stress
Growth factor
RTK
IGF-1
IGF1R
IL-6
IL-6R
RAS
SOS1
GRB2
IRS1
PI3K
Gα
Gβ
Gγ
Gas
Gαi
Gαq/11
PLC
PIP2
DAG
IP3
ATP
cAMP
AC
PKA
Ca2+
CALM
Calcineurin
NFATC4
P
RHO
ROCK
Actin assembly
MLC
Contraction
Cardiac hypertrophy
TAK1
TAB1
MEKK
c-RAF
MKK 3/6
MKK 4/7
MEK 1/2
GSK3β
AKT1
mTOR
eIF2B
eIF4E
p70S6K
Translation
HSP27
MAPKAPK 2/3
p38 MAPK
JNK
ERK 1/2
RSK
Oxidative stress
SRF
GATA4
NFATC4
MEF2
HAND2
HAND1
E12
NKX2.5
NFATC4
GATA4
CBP
NFATC4
p300
CREB
MEF2
ATF6
ATF2
c-JUN
ELK1
ADSS
Hypertrophic response

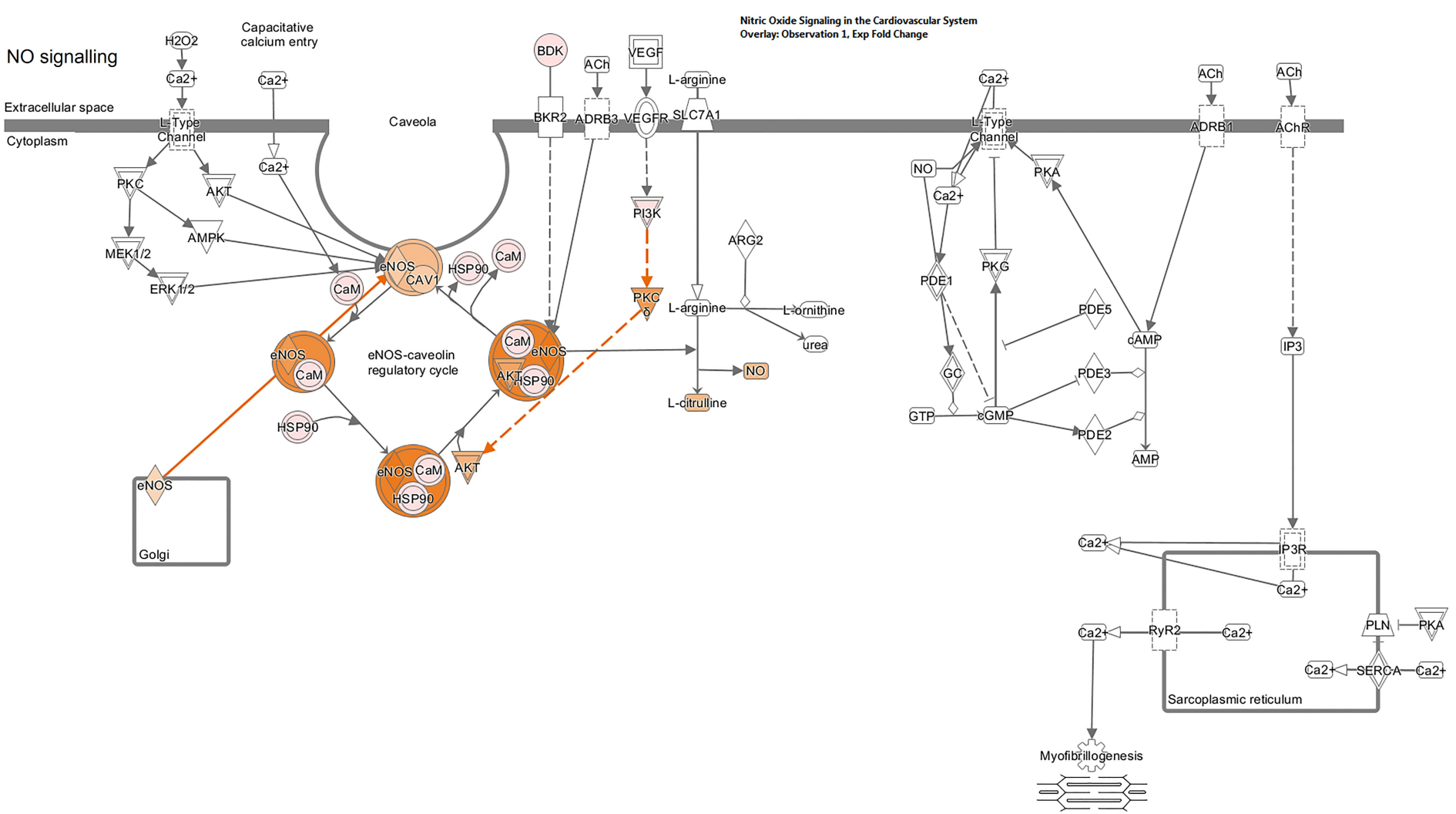

ILK signalling
Extracellular space
Cytoplasm
Nucleus
ECM protein
Integrin β
PP2A
PI3K
FAK
ILKAP
ILK
PIP3
PIP2
PTEN
PI3K
IRS
Growth factors
ECM protein
TNF-α
RTK
Integrin β
TNFR
NCK2
PP2A
DOCK 180
Rac
ERK/MAPK Signaling
PINCH
F-ACTIN
Cell Adhesion
Cell motility
TB4
RSU1
G-ACTIN
ILK
GSK3
JNK
Epithelial mesenchymal transition
RICTOR
α-ACTININ
PARV β
HIC5
PARV α
PXN
PDK1
PHI-1
Cell migration
Cell retraction
ARH GEF6
RAC
CDC42
Cytoskeletal organization
VCL
TESK1
AKT
COFILIN
CASP3
Cell survival
MYPT1
F-ACTIN
KIND2
FILAMIN
Cell motility
MYOSIN
FBLIM1
ERK 1/2
NACA
mTOR
Cytoskeletal reorganization
Actin polymerization
CTNN β
GSK 3
MSK 1/2
NACA
CTNN β
c-JUN
c-FOS
SLUG
SNA
LEF1
CREB
NF-κB
HIF1α
FN1
RHO
DSP
KRT18
MUC
VIM
CDH1
c-MYC
CYCLIN D1
MMP9
VEGF
BMP2
iNOS
COX2
Desmosome assembly
Cell motility
Cytoskeletal reorganization
intermediate filament assembly
Wound healing
Cell proliferation
Inflammation
Tissue invasion
Tumor angiogenesis
Bone formation
Opsonization
Cell Adhesion
Junction assembly
Cell adhesion
Epithelial mesenchymal transition


Integrin signalling
Integrin receptor aggregation, induced by ECM interactions, stimulates signal transduction cascades
Extracellular matrix
Cytoplasm
ECM protein
α-Integrin
β-Integrin
RTK
FAK
GRB2
SHC
PLCγ
GRB7
CRK
NCK
NEDD9
EGFR and integrin crosstalk
CAV1
FYN
SHC
GRB2
SOS
Ras
c-RAF
PAK
FAK
MEK 1/2
ERK 1/2
CALPAIN
MLCK
ERK/MAPK-mediated transcription
PXN
FAK
SRC
ARF
ASAP1*
AND-34
RAP
C3G
CAS
B-RAF
CRKL
VCL
α-ACTIN
TALIN
ACTIN
VASP
ZYX
ACTIN
VCL
C3G
AND-34
IR-RAS
RAF
MLK3
MKK4
JNK1
JNK/SAPK mediated transcription
FAK
PXN
GIT1
DOCK 180
ABL1
CRKL
TALIN
VCL
ACK
SRC
CDC42
WASP
ARP 2/3
PIX
RAC
CDC42
MLK3
PAK
ACTIN
TALIN
RHO
GRAF
FAK
MLCK
ROCK1
RHOGAP5
PIP5K
PIP2
MRLC
MLCP
SRC
PFN
GSN*
VCL
Cytoskeletal rearrangement
Cell motility
Abl1
PXN
ILK
PARVIN-α
PARVIN-β
PINCH1
NCK2
Cytoskeletal organization
PDGFβ
ILKAP
ILK
PI3K
AKT
GSK-3β
PTEN
PI3K Signaling
Wnt Signaling
TSPAN
CTTN
Cell adhesion
Cell activation
Tumor invasion
Cell motility

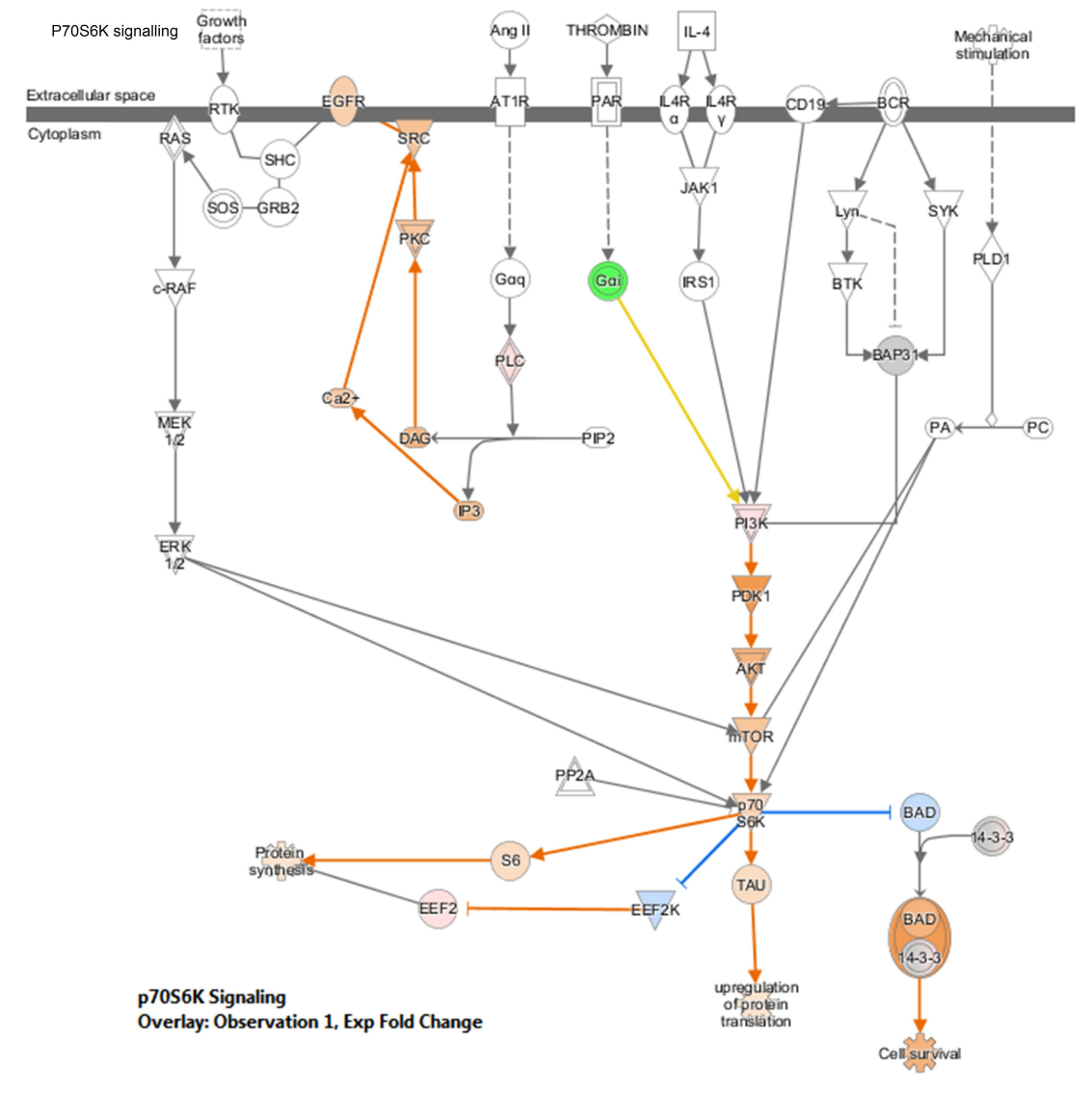
Leukocyte Extravasation signalling

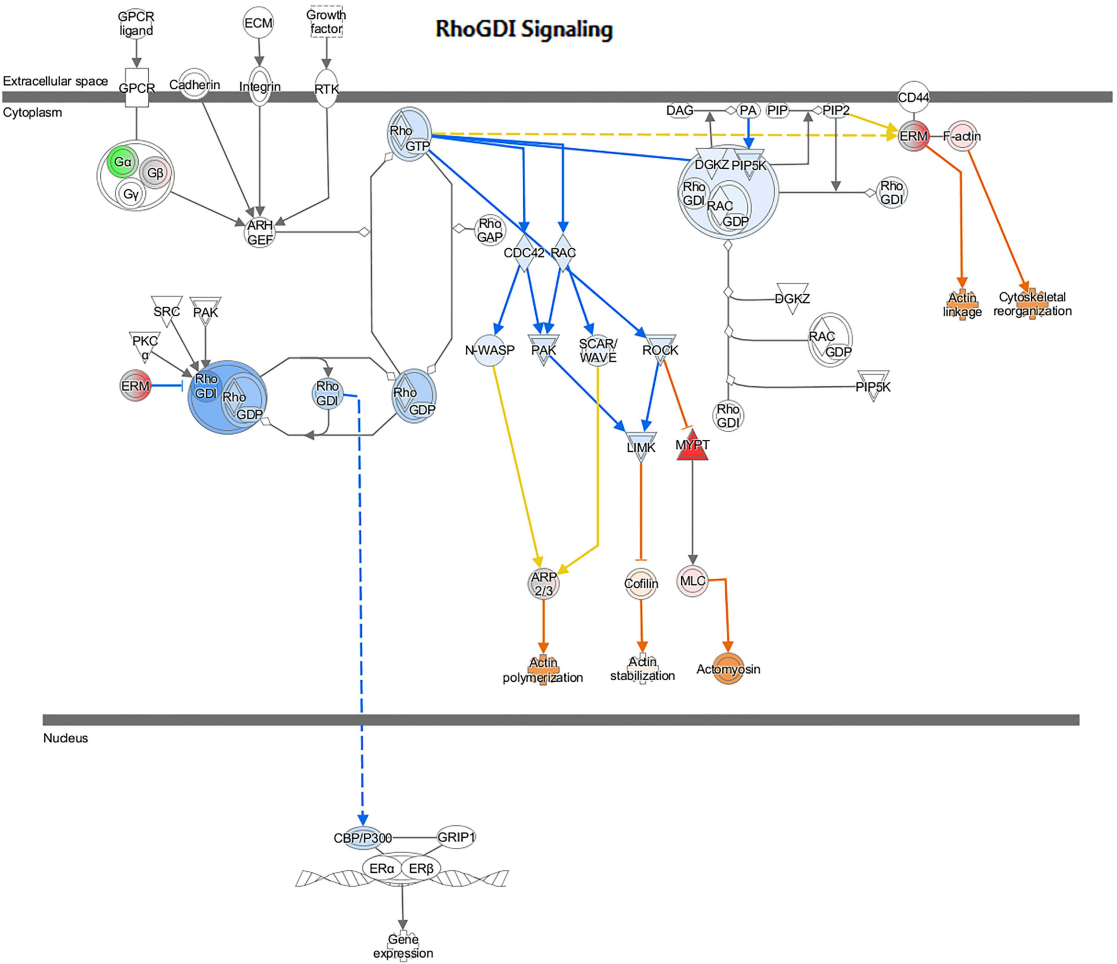


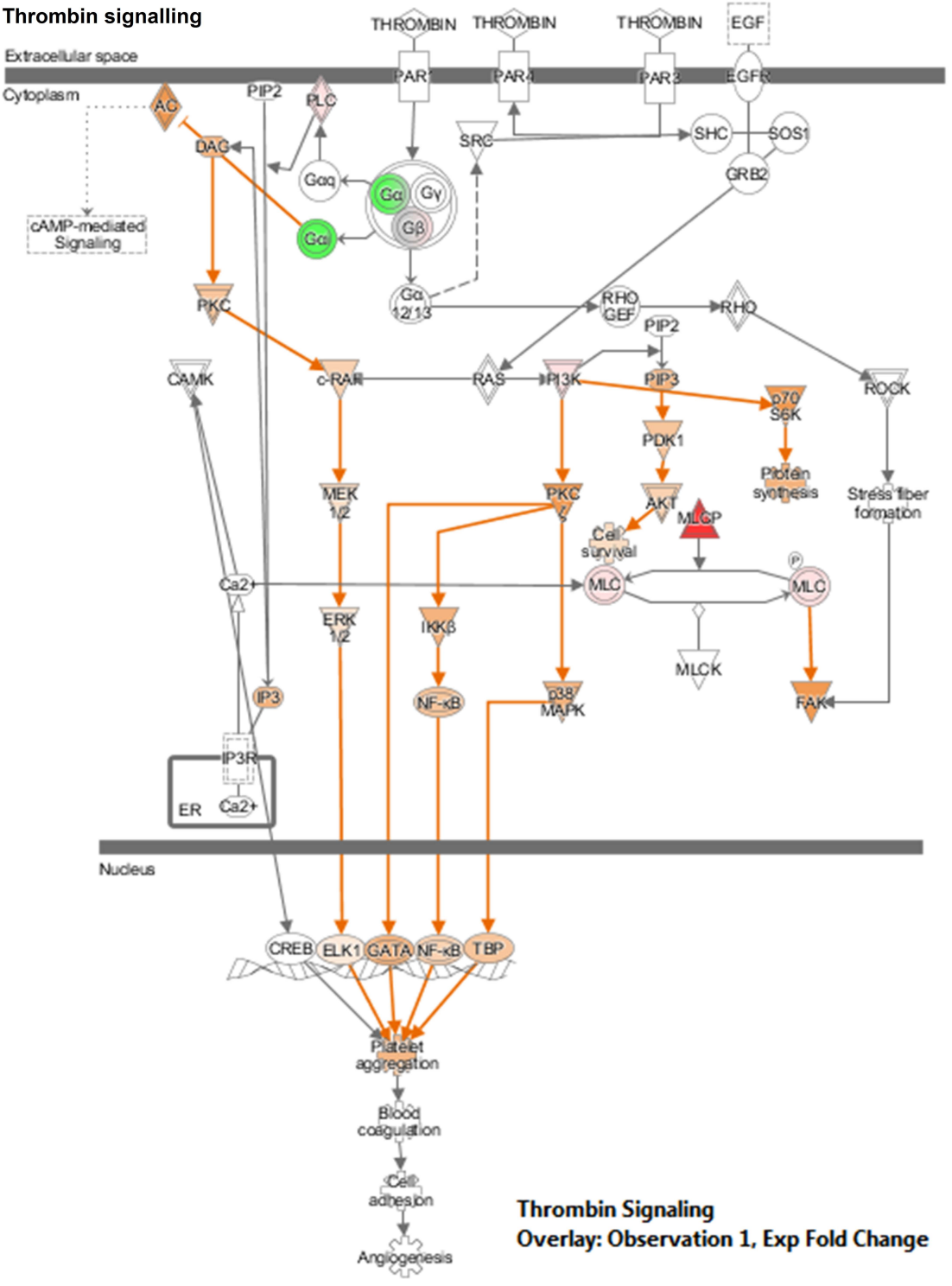

LXR/RXR activation
Extracellular space
Cytoplasm
CETP
LDL
HDL
cholesterol
Bile acid
ABCA1
ABCG1
ABCG5
ABCG8
LDLR
CD36
ECHS1
HADH*
HMGCR
CYP7A1
fatty acid
acetyl-CoA
HMG-CoA
oxysterols
NCOR
LXR
RXR
In the absence of LXR/RXR agonists,
NCORs repressor LXR/RXR-mediated transcription
9-cis-RA
Nucleus
LXR/RXR agonists overcome the
transrepression mediated by NCORs
CYP51A1
FDFT1
LPL
CETP
PLTP
SREBP 1c
FASN
SCD1
ACC
CHREBP
ApoA4
Cholesterol metabolism
Cholesterol biosynthesis
Cholesterol transport
Lipoprotein synthesis
Lipogenesis
Cholesterol efflux
Hepatocyte
LCAT
ApoA1
Viruses
Bacteria
IL-1
LPS
LBP
TNF-α
Us
CD36
SR-A
ABCA1
ABCG1
ABCG4
TLR3
TLR4
IL-1R
LY96
CD14
TLR4
TNFR
IDOL
cholesterol ester
Transcriptionally repressed state
IRF3
NF-κB
SREBP 1c
ApoA5
ApoE
ApoC1
ApoC2
ApoC4
UGT1A3
Arg2
iNOS
COX2
IL-6
IL-1β
MCP-1
MCP-3
MMP9
Inflammatory mediators
Bile acid
immune response
Macrophage

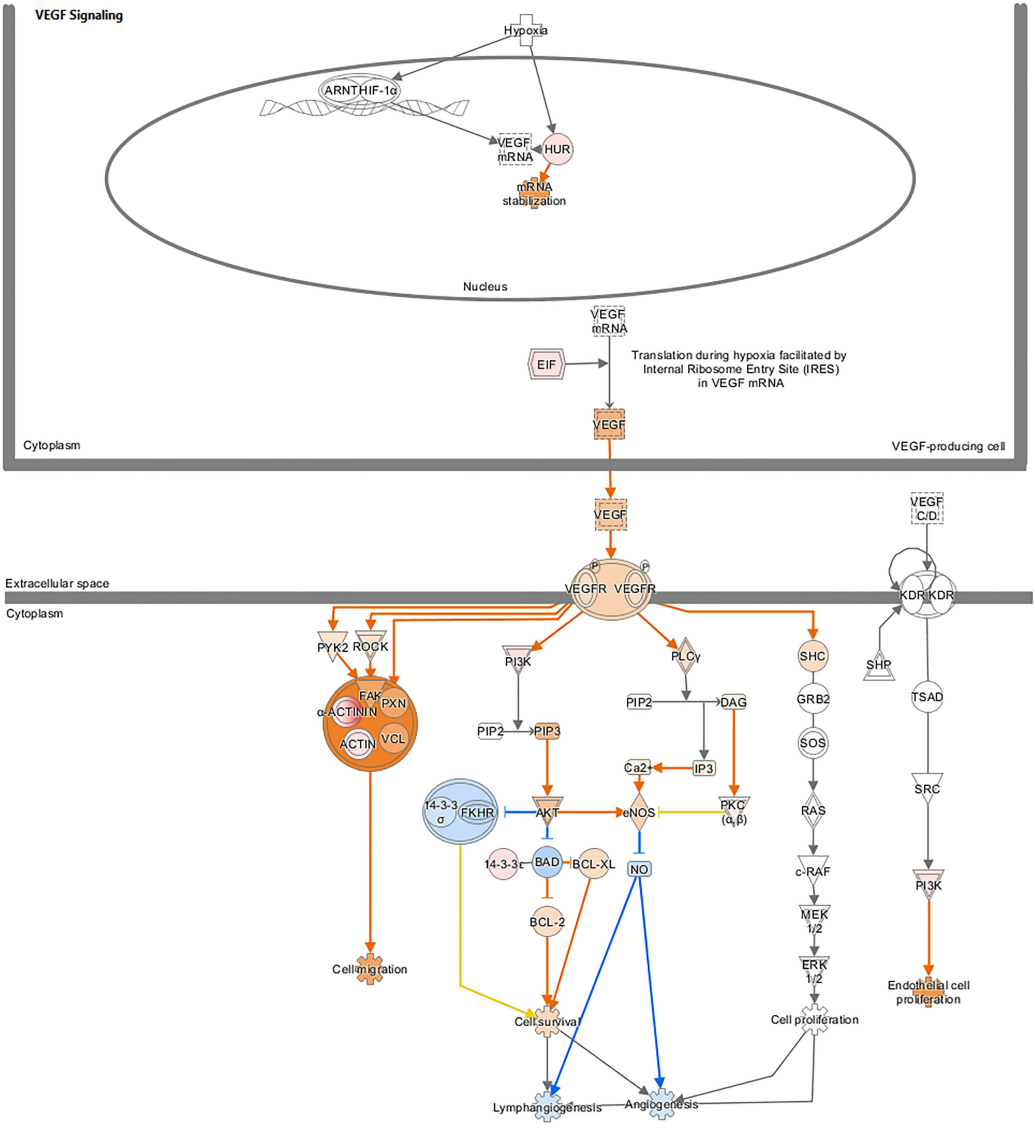
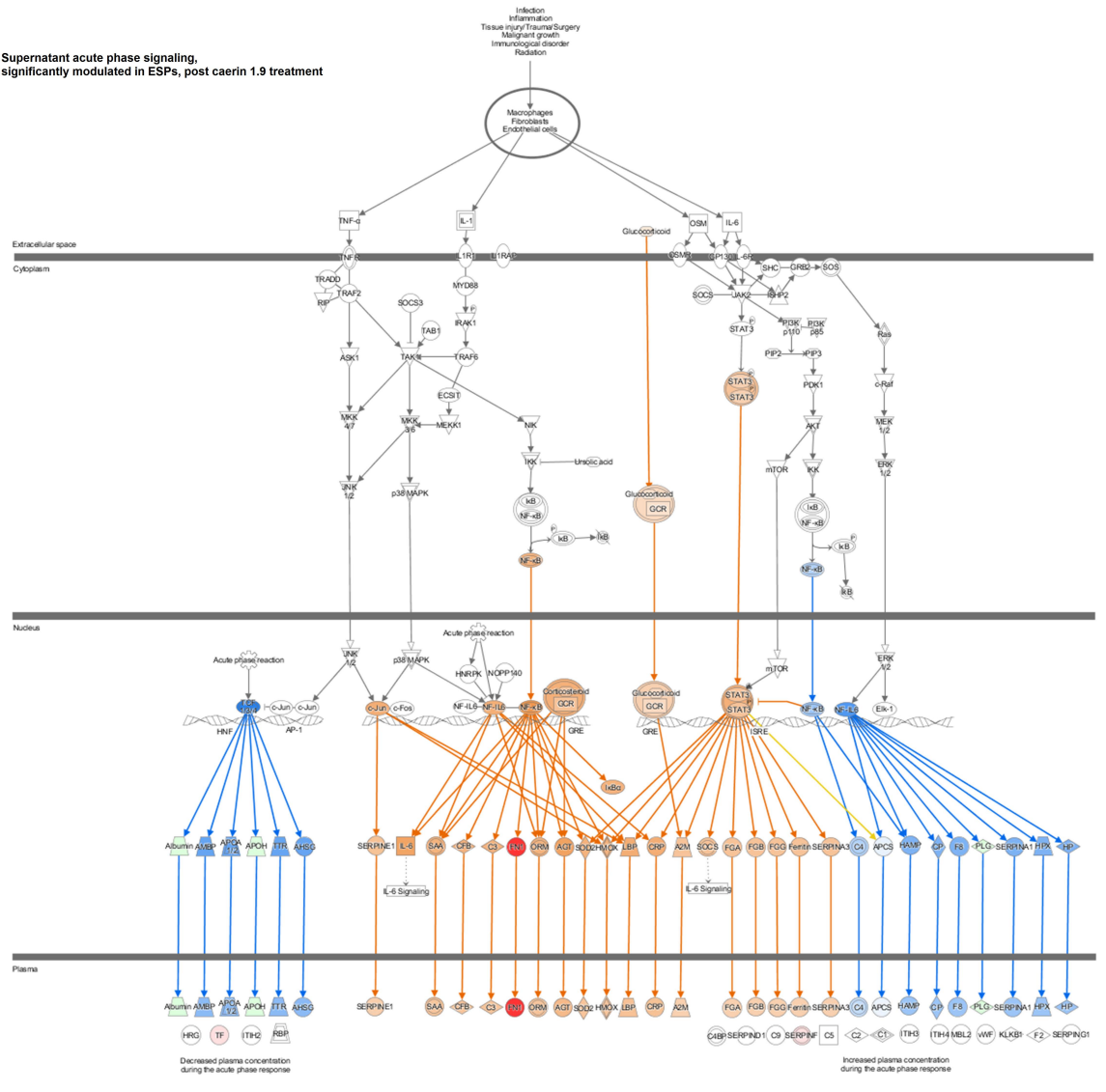

Nitric Oxide Signaling in the Cardiovascular System
Overlay: Observation 1, Exp Fold Change
NO signalling
Extracellular space
Cytoplasm
H2O2
Ca2+
Capacitative calcium entry
L-Type Channel
Caveola
PKC
AKT
AMPK
MEK1/2
ERK1/2
eNOS
CAV1
HSP90
CaM
eNOS-caveolin regulatory cycle
Golgi
BDK
BKR2
ACh
ADRB3
VEGF
VEGFR
SLC7A1
L-arginine
PI3K
PKCδ
ARG2
L-ornithine
urea
NO
L-citrulline
ADRB1
AChR
PKA
PDE1
PKG
PDE5
PDE3
PDE2
cAMP
AMP
GC
GTP
cGMP
IP3
IP3R
RyR2
PLN
SERCA
Sarcoplasmic reticulum
Myofibrillogenesis

ts reserved


P70S6K signalling
Growth factors
Ang II
THROMBIN
IL-4
Mechanical stimulation
Extracellular space
Cytoplasm
RTK
EGFR
AT1R
PAR
IL4R α
IL4R γ
CD19
BCR
RAS
SHC
SRC
SOS
GRB2
JAK1
Lyn
SYK
PKC
PLD1
c-RAF
Gαq
Gαi
IRS1
BTK
PLC
BAP31
Ca2+
MEK 1/2
DAG
PIP2
PA
PC
IP3
PI3K
ERK 1/2
PDK1
AKT
mTOR
PP2A
p70 S6K
BAD
14-3-3
Protein synthesis
S6
TAU
EEF2
EEF2K
BAD
14-3-3
upregulation of protein translation
Cell survival
p70S6K Signaling
Overlay: Observation 1, Exp Fold Change


RhoGDI Signaling
GPCR ligand
ECM
Growth factor
Extracellular space
GPCR
Cadherin
Integrin
RTK
Cytoplasm
CD44
DAG
PA
PIP
PIP2
ERM
F-actin
Rho GTP
Gα
Gβ
Gγ
ARH GEF
Rho GAP
DGKZ
PIP5K
Rho GDI
RAC GDP
Rho GDI
CDC42
RAC
Actin linkage
Cytoskeletal reorganization
SRC
PAK
PKC α
ERM
Rho GDI
Rho GDP
Rho GDI
Rho GDP
N-WASP
PAK
SCAR/ WAVE
ROCK
DGKZ
RAC GDP
PIP5K
Rho GDI
LIMK
MYPT
ARP 2/3
Cofilin
MLC
Actin polymerization
Actin stabilization
Actomyosin
Nucleus
CBP/P300
GRIP1
ERα
ERβ
Gene expression


Thrombin signalling
THROMBIN
THROMBIN
THROMBIN
EGF
Extracellular space
PAR1
PAR4
PAR3
EGFR
Cytoplasm
AC
PIP2
PLC
DAG
SRC
SHC
SOS1
GRB2
Gαq
Gα
Gγ
Gβ
Gαi
cAMP-mediated Signaling
PKC
Gα 12/13
RHO GEF
RHO
PIP2
CAMK
c-RAF
RAS
PI3K
PIP3
p70 S6K
ROCK
PDK1
Protein synthesis
Stress fiber formation
MEK 1/2
PKC ζ
AKT
MLCP
Cell survival
Ca2+
MLC
MLC
ERK 1/2
IKKβ
MLCK
IP3
NF-κB
p38 MAPK
FAK
IP3R
ER
Ca2+
Nucleus
CREB
ELK1
GATA
NF-κB
TBP
Platelet aggregation
Blood coagulation
Cell adhesion
Angiogenesis
Thrombin Signaling
Overlay: Observation 1, Exp Fold Change


VEGF Signaling
Hypoxia
ARNT
HIF-1α
VEGF mRNA
HUR
mRNA stabilization
Nucleus
VEGF mRNA
EIF
Translation during hypoxia facilitated by Internal Ribosome Entry Site (IRES) in VEGF mRNA
VEGF
Cytoplasm
VEGF-producing cell
VEGF
VEGF C/D
Extracellular space
Cytoplasm
P
P
VEGFR
VEGFR
KDR
KDR
PYK2
ROCK
FAK
PXN
α-ACTININ
ACTIN
VCL
PI3K
PLCγ
SHC
SHP
GRB2
SOS
RAS
c-RAF
MEK 1/2
ERK 1/2
TSAD
SRC
PI3K
PIP2
PIP3
PIP2
DAG
IP3
Ca2+
14-3-3 σ
FKHR
AKT
eNOS
PKC (α,β)
14-3-3ε
BAD
BCL-XL
NO
BCL-2
Cell migration
Cell survival
Cell proliferation
Endothelial cell proliferation
Lymphangiogenesis
Angiogenesis

Supernatant acute phase signaling, significantly modulated in ESPs, post caerin 1.9 treatment